

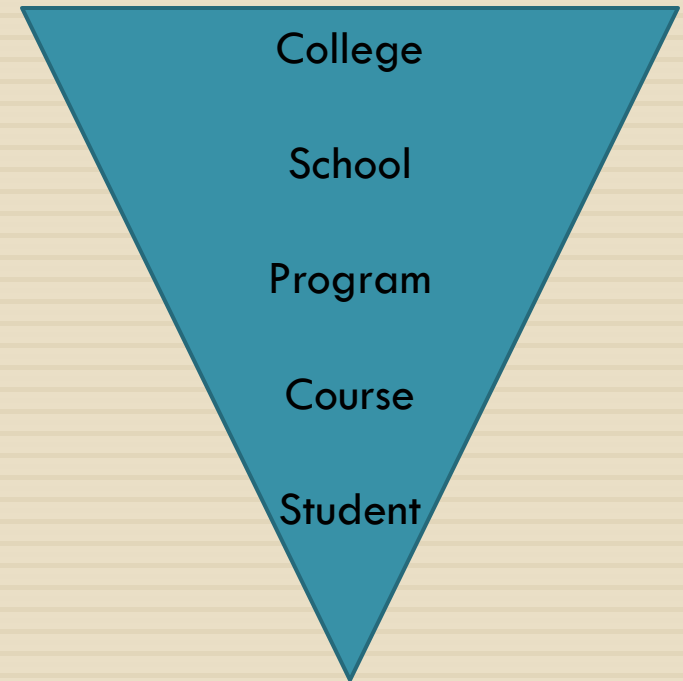


# FOREST TECHNOLOGY PROGRAM – OUTCOME ASSESSMENT

At the Pennsylvania College of Technology  
by G. Andrew Bartholomay

# What is Outcome Assessment?

- ❑ A rose by any other name...
- ❑ An assessment tool for evaluating...
  - ❑ Student performance
  - ❑ Course effectiveness
  - ❑ Program content
  - ❑ School goals
  - ❑ College mission
- ❑ Evaluation tied to Specific goals.



# Outcome Assessment Tools



- Quantifiable
- Related to specific goals
- Reductionistic
- Serve in the data collection role of a feedback loop

# Institutional Hierarchy



## Pennsylvania College of Technology

Mission Statement



## School of Natural Resources Management

6 School Goals



## Forest Technology Program

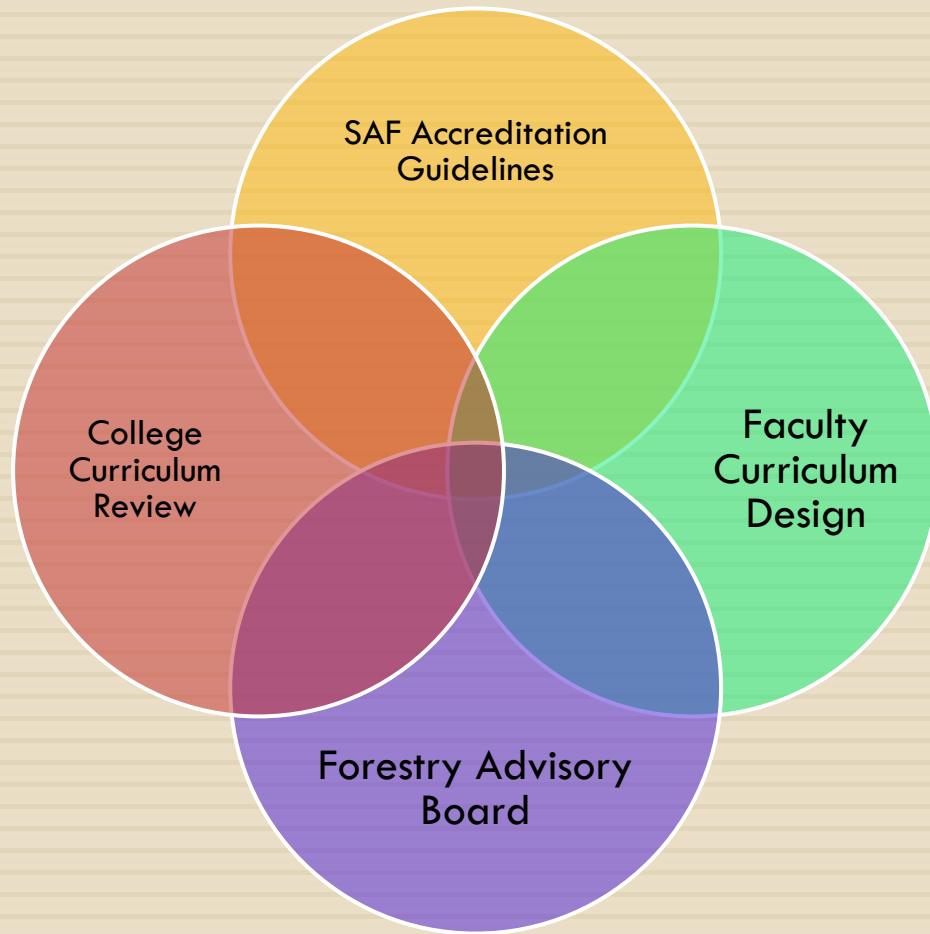
18 Program Goals



## Course Outcomes

Curriculum Objectives

# Defining Program Outcomes



# Defining Program Outcomes

## □ School of Natural Resources Management Goals

Students shall...

- Acquire the skills and knowledge to utilize industry focused technology
- Demonstrate approved safety standards and procedures for their related industry
- Critically read, understand, and apply concepts from technical resources
- Demonstrate written and oral communications that meet professional standards
- Apply critical thinking skills in problem solving and trouble shooting
- Be exposed to industry professionals in their field of study and other appropriate work based experiences.

# Defining Program Outcomes

- SAF Accreditation

- Standard I: Program Objectives

- “The program **shall** have clearly defined, publicly stated objectives...”\*

- Standard II: Curriculum

- “Broad content descriptions of these subject matter areas...,”\* are provided.

\*Standards, Procedures and Guidelines for Accrediting Educational Programs in Forest Technology. Society of American Foresters, December 8, 2008.

# Defining Program Outcomes



- Faculty Curriculum Design
  - Classes fulfill NRM goals
  - Course content meets SAF Standards
  - Entire curriculum addresses all institutional and accreditation goals
    - Student outcomes determined and listed in syllabi.
    - Outcome redundancy built-in among courses



# Course Level Example

## □ School of Natural Resources Management Goal

“Students will...acquire the skills and knowledge to utilize industry focused technology.”

## □ Society of American Foresters – Standard II.f

“Land Surveying: Hand compass; surveying equipment and procedures; pacing and chaining; map reading; deed and title search; land descriptions; computer mapping; GPS; GIS.”

## □ FOR 120 Forest Surveying I – Student outcome

▣ Following course completion, students should be able to:

- apply the fundamentals of plane surveying;
- properly use and care for surveying equipment;
- create and interpret maps;
- understand the theory of measurements.

# Course Outcome Check-List



- FOR 120 – Forest Surveying I
  - ▣ Pace
  - ▣ Hand Compass
  - ▣ Chaining
  - ▣ Differential Leveling
    - Handle Instrument
    - Set up Tripod
    - Level Instrument
    - Read Rod
    - Take Notes

# Theory Outcome Assessment



- Targeted examination
  - ▣ Individual analysis of questions
- Directed Free-Writing
  - ▣ Graded or Ungraded
- Socratic Method?

# Content Overlap

- Society of American Foresters – Standard II.f
  - “Land Surveying: Hand compass; surveying equipment and procedures; pacing and chaining; map reading; deed and title search; land descriptions; computer mapping; GPS; GIS.”
- Courses addressing these outcomes...
  - ▣ Forest Surveying
  - ▣ Mensuration & Advanced Mensuration
  - ▣ Introduction to GIS/GPS
  - ▣ Forest Land Management
  - ▣ Forest Ecology

# Outcome Assessment

- Within Course
  - ▣ Discover patterns of success and struggle
  - ▣ Revisit areas where knowledge is still lacking
  - ▣ Confer with faculty to address problems in other courses
- Post-Course Evaluation
  - ▣ Add, subtract, leave it alone?
  - ▣ Data analysis of outcomes  
(Course/Program/Accreditation)
  - ▣ Additional content in upcoming classes if necessary

# Outcome Assessment Tools

- Exams/Quizzes/Assignments/Labs/Papers
  - ▣ Usually Holistic by design.
  - ▣ Sometimes impractical to use for specific outcomes.
  - ▣ May require question by question analysis.
- Checklists
  - ▣ Lend themselves to binary analysis.
  - ▣ “Encourage” active student participation.

# Assessment of the Assessments



- Pennsylvania College of Technology
  - ▣ “Hard Data” generated and used in upwardly mobile outcome assessment.
  - ▣ Upcoming Middle States Association of Colleges and Schools accreditation.
- School of Natural Resources Management
  - ▣ Applied to recruitment and retention.
  - ▣ Data used to assess college mission.
- Forest Technology Program
  - ▣ Accreditation
  - ▣ Continuous Assessment